

## CONCLUSION

The experiments show that individual Doves have a definite urge, possibly a sustained one, to return to their home territory. They also exemplify these birds' ability to traverse extensive areas of unknown and unfamiliar types of country, i.e. the 45 mile wide strip of jarrah forest extending along the eastern edge of the Darling Ranges and the cultivated wheatbelt to the east of it, while endeavouring to relocate their home ground.

That such a sedentary species should have the urge and ability to return home after displacement, is interesting, and a deeper understanding of both factors is desirable.

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## EXCURSION

### HARTFIELD PARK, FORRESTFIELD

The excursion of the Western Australian Naturalists' Club to this reserve on October 8, 1967, was a success in every respect. Though inclement weather threatened earlier in the day, it turned out fine and genial and the members, who had gathered at the corner of Hale and Hardey Roads at 11.00 a.m., enjoyed a congenial picnic lunch under the shade of a gum tree after a preliminary natural history reconnaissance. The main work was done in the afternoon. Hartfield Park is approximately 400 acres in area, including a portion excised for the Beechboro-Gosnells Highway which will pass through the western corner. It comprises reserves Nos. 19774 and 17098, having a frontage of 58 chains to Hale Road and 68 chains to Hartfield Road. They are class "A" Reserves vested in the Kalamunda Shire Council for purposes of recreation. A strip alongside Hartfield Road is being developed for sporting activities but the bulk of the area is retained by the Shire Council as a nature reserve, and signboards erected along

Hale Road announce the fact to visitors. Hartfield Park is to the north of the University Botany Reserve (at Bickley Road and near Boundary Road).

## BOTANY

With the permission of the Shire Council a representative series of flowering plants was collected under the direction of Miss A. M. Baird, of the University Botany Department. The reserve is in the Southern River Association of the CSIRO soils survey (Soils and Land Use Series, No. 235, 1960) but in the east it grades into the foothills Forresterfield Association. Plants noted which were characteristic of the latter association were the Honeysuckle (*Lambertia multiflora*), the Woody Pear (*Xylomelum occidentale*), the Blue Leschenaultia (*Leschenaultia biloba*), the Smokebush (*Conospermum triplinervium*, var. *undulatum*), and Drummond Coneflower (*Isopogon drummondii*). The part of the reserve adjoining Hale Road is open Jarrah-Banksia-Casuarina woodland with a little Marri (*Eucalyptus ealophylla*) and several Coast Blackbutt (*E. todtiana*). There were many *Xylomelum occidentale*, some very big trees, and a few in flower with "pears" on some. Other trees included *Banksia ilicifolia*, *Adenanthos sericea*, *Nuytsia floribunda* and the two grass trees, *Xanthorrhoea preissii* and *Kingia australis*.

To the south-east, towards Yule Brook, which crosses the southern corner, the ground slopes down to a swampy flat. The swamp was not examined other than to notice the orange-flowered *Eremaea pauciflora*, the numerous *Kingia*, paperbarks, tea-tree (*Leptospermum ellipticum*) and numerous sedges and Restionaceae. Miss Baird pointed out that the water table appeared to be rising as plants like *Xylomelum occidentale* growing on the flats were yellowing and did not look healthy. Some were dead. Also *Lambertia multiflora* was growing here but it was not a plant normally occurring in such situations. Possibly the greater inundation was detrimentally affecting the Jarrah which did not look healthy on the reserve, though fires could be a contributory cause.

Following is a list of species which were in flower, identified by Miss Baird and Mr. R. D. Royce. Those marked with an asterisk were added at a visit in May, 1968, when they were flowering.

## MONOCOTYLEDONS

### Liliaceae

*Johnsonia pubescens* Lindl., *Tricoryne elatior* R.Br., *Burchardia umbellata* R.Br., *Phlebocarya ciliata* R.Br., *Thysanotus pater-soni* R.Br., *Calectasia cyanea* R.Br., *Xanthorrhoea preissii* (Endl.) Ewart, *Kingia australis* R.Br., *Lomandra endlicheri* (F.v.M.) Ewart, *Dasyopogon bromeliaefolius* R.Br.

### Iridaceae

*Patersonia occidentalis* R.Br.

### Haemodoraceae

*Haemodorum* sp., *Conostylis aurea* Lindl., *Anigozanthos humilis* Lindl.

### Orchidaceae

*Caladenia filamentosa* R.Br., *C. flava* R.Br., *C. pectinata* Rogers, *Microtis unifolia* (Forst.f.) Reichb.f., *Elythranthera brunonis* (Endl.) A. S. George.

### Restionaceae

*Leptocarpus canus* Nees., *Restio nitens* Nees., *Lyginia barbata* R.Br. female and male, *Hypolaena exsulea* R.Br.

### **Gramineae**

*Stipa compressa* R.Br., *Amphipogon turbinatus* R.Br.

### **Cyperaceae**

*Mesomelaena tetragona* (R.Br.) F.v.M., *Mesomelaena stygia* (R.Br.) Nees.

## **DICOTYLEDONS**

### **Proteaceae**

*Banksia menziesii* R.Br., *Banksia attenuata* R.Br., *Banksia ilicifolia* R.Br., *Conospermum triplinervium* R.Br., *Conospermum stoechadis* Endl., *Lambertia multiflora* Lndl., *Petrophila linearis* R.Br., *Petrophila erispata* R.Br., *Petrophila seminuda* Lindl., *Synalpheia polymorpha* R.Br., *Adcnanthos cygnorum* Diels., *\*Isopogon drummondii* Benth., *Hakea ruseifolia* Labill., *Stirlingia latifolia* (R.Br.) Steud., *Hakea varia* R.Br., *Hakea suleata* var., *Dryandra nivea* R.Br., *Xylocladum occidentale* R.Br.

### **Leguminosae**

*Bossiaea criocarpa* Benth., *\*Bossiaca biloba* Benth., *Eutaxia virgata* Benth., *Daviesia divaricata* Benth., *Daviesia inerassata* Sm., *Gompholobium tomentosum* Labill., *Jacksonia floribunda* Endl., *Jaeksonia sternbergiana* Hueg., *Jacksonia pteroclada* F.v.M., *\*Hovea trisperma* Benth., *Sphaerolobium* sp., *Aecia* sp.

### **Myrtaceae**

*Eucalyptus marginata* Sm., *Eucalyptus todtiana* F.v.M., *Eremaea pauciflora* Endl., *Melaleuca acerosa* Schau., *Leptospermum ellipticum* Endl., *Kunzea*, *Hypocalymma robustum* Endl., *Hypocalymma angustifolium* Endl., *Beaufortia squarrosa* Schau., *Baeckea camphorosmae* Endl.

### **Casuarinaceae**

*Casuarina humilis* Otto et Dietr., *Casuarina fraseriana* Miq.

### **Orobanchaceae**

*Orobanche australiana* F.v.M.

### **Stackhousiaceae**

*Stackhousia pubescens* A. Rich.

### **Droseraceae**

*Drosera stolonifera* Endl., *Drosera menziesii* R.Br.

### **Polygalaceae**

*Comesperma* sp.

### **Violaceae**

*Hybanthus calycinus* (Steud.) F. Muell.

### **Thymelaeaceae**

*Pimelia sulphurea* Meissn.

### **Campanulaceae**

*Wahlenbergia capensis* D.C.

### **Aizoaceae**

*Maearthuria australis* Hueg.

### **Dilleniaceae**

*Hibbertia hypericoides* (D.C.) Benth., *Hibbertia huegelii* (Endl.) F.v.M., *Hibbertia aurea* Steud., *Hibbertia pachyrrhiza* Steud.

### **Rutaceae**

*Eriostemon spicatus* A. Rich.

### **Umbelliferae**

*Traehymene pilosa* Sm., *Xanthosia* sp.

### Epacridaceae

*Leucopogon sprngelioides* Sond., \**Leucopogon conostephioides* D.C., *Conostephium pendulum* Benth., *Lysinema ciliatum* R.Br., \**Astroloma stomarrhena* Sond.

### Goodeniaceae

*Scaevola paludosa* R.Br., *Dampiera tinearis* R.Br.

### Labiatae

*Hemiandra linearis* Benth.

### Stylidiaceae

*Stylidium brunonianum* Benth., *Stylidium pitifcrum* R.Br., *Stylidium schoenoides* D.C., *Stylidium calcaratum* R.Br., *Stylidium ciliatum* Lindl., *Stylidium divroides* Lindl., *Stylidium carnosum* Benth.

### Compositae

*Podotheca augustifolia* Cass., *Podotheca gnaphalioides* Grah.

## BIRDS

The observers (John Dell, C. P. S. de Rebeira, D. L. Serventy and R. H. Stranger) recorded 35 species of birds. Details:

Hoary-headed Grebe (*Podiceps poliocephalus*) a single bird was feeding on a pool at the north-eastern corner of the reserve. White-fronted Heron (*Ardea novae-hollandiae*), two birds seen, one at the pools, the other flew from the inundated area. Manded Goose (*Chenonetta jubata*), a solitary male at the pools. Black Duck (*Anas superciliosa*), one flushed from the pools. Black-shouldered Kite (*Elanus notatus*), seen hovering along the roadside verge. Nankeen Kestrel (*Falco cenchroides*), a pair was hovering along the roadside. Black-fronted Dotterel (*Charadrius melanops*), an individual was feeding on a small mud-bank at the pools. Spotted Turtledove (*Streptopelia chinensis*), a single bird was recorded among Jarrah. Senegal Turtledove (*S. senegalensis*), several seen on verges near habitation. Galah (*Cacatua roseicapilla*), a calling bird flew east near the southern boundary. King Parrot (*Purpuricapillus spurius*), one seen among Marri near the southern boundary. Pallid Cuckoo (*Cuculus pallidus*), calling. Horsfield Bronze Cuckoo (*Chrysococcyx basalis*), heard calling on two occasions. Golden Bronze Cuckoo (*C. plagosus*), calling frequently. Laughing Kookaburra (*Dacelo gigas*), several seen near the inundated area. Sacred Kingfisher (*Halcyon sancta*), several seen near water, calling vigorously; one gave a nesting alarm call when a Kookaburra approached. Bee-eater (*Merops ornatus*), calling while flying high over the reserve; this species arrived in the metropolitan area on October 4. Tree Martin (*Petrochelidon nigricans*), several seen hawking. Western Warbler (*Gerygone fusca*), calling among Jarrah. Western Thornbill (*Acanthiza inornata*), small parties seen among Jarrah. Yellow-tailed Thornbill (*A. chrysorrhoa*), several seen among Christmas trees (*Nuytsia*). Willy Wagtail (*Rhipidura leucophrys*), a pair was present at the pools. Hooded Robin (*Petroica cucullata*), a solitary male was recorded among the *Xylomelum* and Jarrah association. Rufous Whistler (*Pachycephala rufiventris*), common throughout the timbered area, singing vigorously. Western Shrike-Thrush (*Colluricincla rufiventris*), heard calling. Red-tipped Pardalote (*Pardalotus substriatus*), common among Jarrah; a nest was observed in a leaning Jarrah 20 feet from the ground. Western Silvereye (*Zosterops gouldi*), fairly plentiful. Spinebill (*Acanthorhynchus superciliosus*), a silent male was recorded among the *Xylomelum* and Jarrah association. Brown Honeyeater (*Lichmera indistincta*), very common, calling. Singing Honeyeater (*Meliphaga virescens*), noted near habitation. Red Wattle-bird (*Anthochaera caruncu-*

*lata*), noticed calling on several occasions. Magpie-Lark (*Grallina cyanoluca*), several seen near the pools. Black-faced Wood-Swallow (*Artamus cinereus*), a party of seven was seen hawking near the pools. Western Magpie (*Gymnorhina dorsalis*), a pair was observed feeding fledged young near the pools; the adults were very aggressive towards the Willy Wagtails. Raven (*Corvus coronoides*), heard calling.

#### OTHER FAUNA

John Dell reported:

Four Brush Wallaby (*Macropus irma*) were flushed from low scrub and bounded short distances. Members noticed evidence of Quenda (*Isoodon obesus*) diggings. A large rabbit warren was seen and fox tracks were numerous. There were fresh remains of domestic fowls near the middle of the reserve, apparently fox kills.

Two skinks only were noted. A single specimen of *Ablepharus* was collected under litter and three Bobtails (*Trachysaurus rugosus*) were seen.

Tadpoles and recently metamorphosed frogs of *Crinia* sp. were plentiful throughout the inundated area. A single *Pseudophryne guentheri* was seen and a few *Hebioporus* tadpoles were present in the pools.

Insects were very numerous, particularly grasshoppers, locusts, tettigoniid crickets, dragonflies, damselflies, termites and ants. A single leaf-hopper, *Eurymclops* sp. was collected on Jarrah bark and the Scorpionfly, *Harpobittacus*, was present on Jarrah blossom.

The afternoon sun brought out several species of butterfly. Two specimens of Lesser-Wanderer (*Danaus chrysippus petilia*) were recorded; the Australian Painted Lady (*Pyrameis cardui kershawi*) was fairly plentiful and numerous small blues, Lycaenidae, were present throughout the low vegetation of the inundated area.

The Christmas Spider (*Gasteracantha minax*) was extremely abundant. Other species were seen.

—D.L.S.

#### FROM FIELD AND STUDY

**Occurrence of Numbat near Jarrahdale.**—The Numbat *Myrmecobius fasciatus*, is normally thought of as an inhabitant of wandoo forest. However, on October 24, 1967, at the junction of Frollet's Road and Johnson's Road, 5 miles east of Jarrahdale, I saw one of these animals. It was sitting upright in the centre of the road, when first observed, and raced into the bush when my vehicle was near, in a series of bounding leaps. Its bushy cinnamon tail and black and white striped body were clearly visible.

The vegetation in this area, and for many miles to the east, is typical jarrah forest growing on laterite. In the immediate vicinity of the road junction the forest is regrowth jarrah and marri, with a lower story of *Banksia*, *Casuarina* and *Xanthorrhoea*. There is a swampy area to the east, the head of a creek flowing into the Serpentine River, which at this time was wet and flowing. The main vegetation here is tussock grasses and *Leptospermum*.

There is plentiful dead felled timber in the swamp, while in the forest, which was cut quite a few years ago, fallen timber